

Comments on RM-11831

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I offer my comments in opposition to this proceeding regarding digital mode transparency.

I have been a licensed HAM operator for 24 years and a communications engineering professional for 28 years. I have personally witnessed and participated in innovations that had roots in HAM radio, and in particular, experimentation in HAM radio. The benefits to society and industry of inspiring young talent to innovate have been proven time and again.

Keeping HAM radio alive, open, self-policing, and a place for experimentation is a worthy goal.

As an example in the early 1990s while working for Qualcomm, Phil Karn (KA9Q) adapted an ARQ protocol he created for HAM radio and created an initial TCP/IP service over cellular links. While many factors were involved, this initial innovation helped lead to the mobile Internet which has become a profoundly impactful technology and business in modern society. Phil's experiments in HAM helped Qualcomm, an American company, establish a leadership position in this exciting new area, and led to significant benefits to society and industry.

During my career at Qualcomm (I started as an engineer in 1991, headed Qualcomm's Corporate R&D division from 2006-2017, and served as Chief Technology Officer from 2011-2017), I witnessed and participated in many wireless innovations.

From that experience, several clear facts I feel apply here:

- Radio spectrum is a valuable and scarce resource, and its efficient use is a key technology
- Modern innovations in wireless data transmission are complex and require high performance processing
- Fundamentally, performance improvements in wireless data transmission typically make it more difficult for an observer to intercept the signal.

Technologies such as power control, adaptive modulation, ARQ, data compression, even high gain antenna arrays all produce significant performance gains but have the effect of making it more difficult for an observer to receive. However that is not the intent of these techniques - their intent is to improve performance. Outright encryption - which does intend to make it difficult for an observer - is already disallowed for all HAM operations. Commercial use is also already disallowed on HAM bands.

The proposed changes in RM-11831 contrast with the basis and purpose of the amateur radio service as described in 97.1:

§97.1 Basis and purpose. The rules and regulations in this part are designed to provide an amateur radio service having a fundamental purpose as expressed in the following principles:

- (a) Recognition and enhancement of the value of the amateur service to the public as a voluntary noncommercial communication service, particularly with respect to providing emergency communications.
- (b) Continuation and extension of the amateur's proven ability to contribute to the advancement of the radio art.
- (c) Encouragement and improvement of the amateur service through rules which provide for advancing skills in both the communication and technical phases of the art.
- (d) Expansion of the existing reservoir within the amateur radio service of trained operators, technicians, and electronics experts.
- (e) Continuation and extension of the amateur's unique ability to enhance international goodwill.

Specifically I note 97.1(a) where services such as WINLINK are widely used by emergency service volunteers including ARES. Regardless of what modes are used on the radio, WINLINK already makes available all messages on the network for observers. RM-11831 would restrict several common operating modes of the WINLINK service.

Additionally I argue realizing the goals put forth in 97.1(b) - 97.1(e) all require the allowance, if not outright encouragement, of new innovations and advanced techniques which have the goal of improving performance and efficiency.

RM-11831 is not necessary - as encryption and commercial use are already disallowed - and the proposed remedies may be harmful by immediately impacting existing emergency services, and causing harmful long term impact to the technology roadmap of the amateur service.

Allowing only simpler, often obsolete modes will discourage experimentation and drive young innovative minds away from the hobby.

For the above reasons I recommend that the Commission dismiss the petition.

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